River and station	Flood stage	Above flood stage—dates From—	Above flood stage—dates To—	Crest Stage	Crest Date (all dates in April except as otherwise specified)
EAST GULF DRAINAGE—continued					
	Feet			*Feet*	
Pascagoula: Merrill, Miss	20	26	29	20.7	27
Chickasawhay:					
Enterprise, Miss	21	23	26	26.0	25
Shubuta, Miss	27	24	29	29.2	28
Leaf: Hattiesburg, Miss	19	24	25	20.3	24
Pearl:					
Edinburg, Miss	21	24	28	23.3	26
Jackson, Miss	20	11	(1)	29.8	30
Monticello, Miss	18	22	28	20.8	23
Columbia, Miss	18	23	(1)	22.9	25
West Pearl: Pearl River, La	13	11	(1)	16.0	28
GREAT LAKES DRAINAGE					
Saginaw: Saginaw, Mich	19	8	11	20.0	9
Tittabawassee:					
Midland, Mich	18	6	9	20.0	8
Shields, Mich	16	8	9	17.4	8
Pine: Alma, Mich	7	4	9	8.0	7
Grand:					
Eaton Rapids, Mich	5	3	11	5.1	9
Grand Rapids, Mich	11	7	10	11.4	8
MISSISSIPPI DRAINAGE					
Allegheny: Lock 5, Freeport, Pa	24	(2)	(2)		30
Stony Creek: Johnstown, Pa	10	30	(1)	13.0	30
Youghiogheny: Confluence, Pa	10	30	30	11.0	30
Tuscarawas: Gnadenhutten, Ohio	9	(2)	3	11.4	Mar. 31
		23	24	9.6	23
Walhonding: Walhonding, Ohio	8	22	22	8.2	22
Scioto: Larue, Ohio	11	22	22	11.2	22
Tippecanoe: Norway, Ind	6	2	2	6.0	2
		16	16	6.0	16
White: Decker, Ind	18	26	29	18.6	28
White, West Fork:					
Elliston, Ind	19	23	24	19.5	23
Edwardsport, Ind	15	2	4	15.7	3
		23	26	16.9	24
Tennessee:					
Florence, Ala	18	24	25	18.1	24
Riverton, Ala	33	23	27	37.8	25
Elk: Fayetteville, Tenn	14	22	25	20.1	24
Mississippi:					
Louisiana, Mo	12	14	15	12.1	15
Hannibal, Mo	13	9	16	13.5	14
Illinois:					
Morris, Ill	13	9	9	13.0	9
Peru, Ill	14	1	28	17.0	10
Henry, Ill	10	9	23	11.2	12–14
Havana, Ill	14	10	29	15.1	16–18
Beardstown, Ill	14	10	(1)	16.0	16–18
Pearl, Ill	12	9	27	13.3	18
Meramec:					
Steelville, Mo	12	7	7	14.7	7
Pacific, Mo	11	6	9	20.0	9
Valley Park, Mo	14	6	10	23.0	9
Bourbeuse: Union, Mo	12	6	8	16.4	8
St. Francis: St. Francis, Ark	17	9	19	21.3	12
		22	(1)	21.2	27
Arkansas:					
Fort Smith, Ark	22	23	25	23.4	25
Dardanelle, Ark	20	24	27	21.5	25
Morrilton, Ark	20	24	27	21.0	26
Yancopin, Ark	29	8	(1)	36.5	30
Little Arkansas: Sedgwick, Kans	18	5	5	18.0	5
Petit Jean: Danville, Ark	20	6	10	25.6	7
		22	25	23.5	23
White: Cotter, Ark	21	7	8	22.8	7
		23	25	25.5	24
Calico Rock, Ark	18	6	9	28.8	7
		21	26	31.8	22
Batesville, Ark	23	6	10	32.6	7
		22	26	33.4	22
Newport, Ark	26	8	13	30.3	10
		23	30	32.0	25
Georgetown, Ark	22	10	(1)	28.2	28–29
DeValls Bluff, Ark	24	12	(1)	27.9	30
Clarendon, Ark	30	28	(1)		
Black:					
Poplar Bluff, Mo	14	7	9	16.6	8
		22	25	15.8	23
Corning, Ark	11	7	(1)	13.5	24–28
Block Rock, Ark	14	6	(1)	24.9	22
Cache: Patterson, Ark	9	8	17	9.7	13–14
		23	(1)	9.6	27–29
Tallahatchie: Swan Lake, Miss	25	(2)	10	29.4	Mar. 25–26
		24	(1)	30.6	May 3–4
Sulphur:					
Ringo Crossing, Tex	20	6	9	25.8	6
		22	25	22.4	24
Finley, Tex	24	10	15	25.9	11
		29	30	24.0	29–30

[1] Continued at end of month.
[2] Continued from last month.
[3] Below flood stage at 8 a. m. Apr. 1.

River and station	Flood stage	Above flood stage—dates From—	Above flood stage—dates To—	Crest Stage	Crest Date (all dates in April except as otherwise specified)
MISSISSIPPI DRAINAGE—continued					
	Feet			*Feet*	
Ouachita:					
Arkadelphia, Ark	12	7	8	17.3	8
		22	24	16.0	23
Camden, Ark	30	11	11	30.4	11
		25	28	32.2	27
WEST GULF DRAINAGE					
Trinity: Dallas, Tex	25	5	7	32.4	6
PACIFIC DRAINAGE					
Sacramento: Knights Landing, Calif	18	(2)	1	19.2	Mar. 28–30
Willamette:					
Harrisburg, Oreg	7	(2)	(4)	(4)	(4)
Portland, Oreg	15	1	4	15.5	3

[2] Continued from last month.
[4] Report missing.

MEAN LAKE LEVELS DURING APRIL, 1928

By UNITED STATES LAKE SURVEY

[Detroit, Mich., May 4, 1928]

The following data are reported in the Notice to Mariners of the above date:

Data	Lakes [1] Superior	Michigan and Huron	Erie	Ontario
Mean level during April, 1928:	*Feet*	*Feet*	*Feet*	*Feet*
Above mean sea level at New York	601.51	579.52	571.79	246.42
Above or below—				
Mean stage of March, 1928	+0.09	+0.59	+0.29	+0.45
Mean stage of April, 1927	+0.41	+0.72	+0.03	+0.45
Average stage for April, last 10 years	+0.46	−0.12	−0.13	+0.54
Highest recorded April stage	−0.88	−3.71	−2.39	−2.01
Lowest recorded April stage	+1.71	+1.70	+0.98	+1.58
Average departure (since 1860) of the April level from the March level	+0.06	+0.24	+0.54	+0.59

[1] Lake St. Clair's level: In April, 1928, 574.18 feet.

EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, APRIL, 1928

By J. B. KINCER

General summary.—During the first decade of April, the unusually warm weather advanced fruit trees rapidly in the interior of the country, and at many places they had reached a stage susceptible to frost when a sudden change to cold weather and freezing in many districts occurred. As a result, more or less general damage was done to early fruit over most central trans-Mississippi sections from southern Iowa and Nebraska southward to the northern portions of Arkansas and Oklahoma, and also in northwest and west Texas and New Mexico, the heaviest damage apparently being in the southwestern portion of this area. Elsewhere there was no widespread harm, although some local frosting was reported. The weather was generally favorable in the more eastern States and field operations made good advance, but in the South work was retarded, and cool weather the latter part prevented good growth of vegetation. It was also too cool, cloudy, and wet in the interior valleys, but the Pacific Coast States had favorable weather, although it was generally too cool in the Rocky Mountain districts.

During the second decade the unusually cold, cloudy, windy, and rainy weather in Central and Northern States, with snows in parts, made generally unfavorable conditions for agricultural interests. Tender vegetation was retarded in growth, damaged, or killed by the cold over most of the southern half of the country. Farm work was delayed in most sections east of the Rocky Mountains, with very little corn or cotton planted. Soil moisture was sufficient in most places, however, although extreme southern Florida was still dry and drought continued in parts of the Great Plains and the Southwest.

During the last decade the weather conditions were generally unfavorable for farm interests, especially in the South, although the latter part of the period brought more seasonable temperature conditions in practically all of the eastern half of the country. Growth of all warm weather crops was retarded in the Southeast and field operations were delayed, but considerable work was accomplished in the interior valleys during the latter part. The weather was more favorable over the western half of the country and satisfactory advance of both crops and field operations was noted. Rain was still needed over large areas of the Great Plains southward to the Rio Grande. At the close of the month warm, dry weather was needed in the East and general warm rains over most of the trans-Mississippi area.

Small grains.—During the first part of the month additional moisture was beneficial for winter wheat in the western and southwestern portions of the belt; growth was slow because of cold weather, but conditions continued generally satisfactory. In the Southeast and Atlantic Coast States the weather was favorable and good progress was noted, but in the Ohio Valley area reports continued generally unfavorable, with unusually heavy winterkilling indicated from most sections. Winter wheat made slow progress during the second decade, with deterioration noted in parts of the Southwest. Progress was poor in the upper Mississippi Valley, while in the Ohio Valley little change was noted; in the Atlantic coast area moisture was beneficial. During the last part of the month further deterioration was noted in Nebraska and much of the Ohio Valley area. In Kansas progress continued satisfactory, except in the west, and beneficial rains occurred in western Oklahoma, but in other portions of the Great Plains continued cool, dry weather was detrimental.

A fair amount of spring wheat was seeded during the first decade in parts of the southern belt, but little was accomplished otherwise because of the general cold. Spring oat seeding made fair progress and was well along. During the second decade precipitation was favorable in South Dakota, but conditions were generally unfavorable for seeding. Considerable oats were seeded in the Ohio Valley States, but the cold, wet weather was generally unfavorable for this crop. Toward the close of the month more seasonable weather prevailed over most of the spring wheat belt and better conditions for seeding obtained. The oat crop continued backward in the interior valleys with much still unsown in the Lake region.

Corn.—General rains and cold weather the latter part of the first decade retarded the preparation of soil for corn planting in many interior sections. Some corn was planted as far north as southern Kansas in the West and in the East to North Carolina. In the Southern States there was considerable planting and the early-seeded seemed to have germinated fairly well. During the second decade preparations for corn planting were practically at a standstill in the upper Mississippi and lower Missouri Valleys, but considerable was accomplished in the eastern portion of the belt and in the Atlantic coast area. During the last decade seeding made fair advance in the western half of the belt and eastward to the central Ohio Valley, but farther east the cold, rainy weather retarded field work and but little planting was accomplished. The early seeded in the southern half of the country made poor progress because of unfavorable weather.

Cotton.—In the eastern Cotton Belt much of the first decade was favorable for field work and good progress in planting was reported from the Southeast. It was generally unfavorable for planting west of the Mississippi River, with the low temperatures and high winds especially detrimental in Texas. The second decade was decidedly unfavorable in the Cotton Belt, and only a small amount of cotton was planted, while the early seeded either deteriorated or made very slow progress, with much of it reported killed in central, northern, and western Texas and parts of Arkansas. In the more eastern portions of the belt conditions were somewhat better, with fair germination indicated. The first part of the last decade was very unfavorable in the eastern part of the belt, but there was some improvement toward the close. In Texas the cool nights, windy weather, and dryness were detrimental, with progress and condition of the crop poor to only fair. It was also too cool and wet in Oklahoma, with slow progress in planting and indications of poor germination.

Miscellaneous crops.—Pastures and meadows were greening rather generally in the East during the first decade, but the weather was too cool for growth of grass in the Great Plains area. Precipitation was of benefit in parts of the Southwest, but slow growth was reported from some western portions. Cold weather was unfavorable for livestock in the West, especially for lambing and shearing. During the second decade pastures showed some improvement in the Southeast and ranges were greening slowly in the Great Plains and affording some feed. Cold weather delayed growth of range forage in some western parts, and lambing and farrowing were also unfavorably affected by coolness. During the last decade pastures did fairly well in most of the South, but in northern parts growth was slow and rains would have been beneficial in the Great Plains. Precipitation was needed in parts of the Southwest, but shearing and lambing were favored.

Potato planting had progressed northward to Wisconsin and South Dakota at the close of the month and mostly satisfactory advance of the crop was reported, except for some injury by freezing from North Carolina westward to Arkansas during the latter part of the month. There was considerable damage by the low temperatures to tender vegetation from Maryland to Arkansas during the second decade, with all tender truck reported killed in northern and western Texas. Truck made generally satisfactory advance in most other portions. Cold weather damaged early fruit bloom during the second decade in middle Atlantic sections and also in Tennessee and Arkansas, but in the main peach sections of the Southeast, including North Carolina, there was no material harm.

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